Agency for Healthcare Research and Quality
Advancing Excellence in Health Care

NATIONAL QUALITY MEASURES CLEARINGHOUSE

General

Title

Dental care: percentage of caries-related ED visits among children 0 through 20 years in the reporting year for which the member visited a dentist within 7 days of the ED visit.

Source(s)

American Dental Association (ADA). Dental Quality Alliance user guide for measures calculated using administrative claims data, version 2.0. Chicago (IL): Dental Quality Alliance (DQA); 2016 Jan 1. 27 p. [26 references]

Dental Quality Alliance (DQA). DQA measure specification sheet: follow-up after emergency department visit by children for dental caries. Chicago (IL): Dental Quality Alliance (DQA); 2015. 8 p.

Measure Domain

Primary Measure Domain

Clinical Quality Measures: Process

Secondary Measure Domain

Does not apply to this measure

Brief Abstract

Description

This measure is used to assess the percentage of caries-related emergency department (ED) visits among children 0 through 20 years in the reporting year for which the member visited a dentist within 7 days of the ED visit.

Note:

This measure only applies to programs such as Medicaid that provide both medical insurance and dental benefit.
This measure was developed for program-level reporting for such programs as Medicaid and the Children's Health Insurance Program that include both medical and dental benefits.

Rationale

There are approximately 1 million emergency department (ED) visits per year for non-traumatic dental conditions in the United States and more than 200,000 visits are made by children (Allareddy et al., "Hospital-based emergency department visits involving dental conditions," 2014; Seu, Hall, & Moy, 2012; Allareddy et al., "Hospital-based emergency department visits with dental conditions among children," 2014). Untreated dental caries (tooth decay) and its sequelae (e.g., dental infections) account for almost 80% of these visits (Seu, Hall, & Moy, 2012; Allareddy et al., "Hospital-based emergency department visits with dental conditions among children," 2014). Dental caries is preventable, and use of the ED for dental caries related conditions results in substantial costs (Allareddy et al., "Hospital-based emergency department visits involving dental conditions," 2014; Allareddy et al., "Hospital-based emergency department visits with dental conditions among children," 2014). Moreover, ED care for dental caries-related conditions is generally not definitive compared to that provided in primary care dental settings and often results in referral to primary care dental sites (Cohen et al., 2011; Hocker et al., 2012; Lewis, Lynch, & Johnston, 2003). This process of care measure can be used to assess if the patient had timely follow-up with a dentist for more definitive care.

Evidence for Rationale

Allareddy V, Nalliah RP, Haque M, Johnson H, Rampa SB, Lee MK. Hospital-based emergency department visits with dental conditions among children in the United States: nationwide epidemiological data. Pediatr Dent. 2014 Sep-Oct;36(5):393-9. PubMed

Allareddy V, Rampa S, Lee MK, Allareddy V, Nalliah RP. Hospital-based emergency department visits involving dental conditions: profile and predictors of poor outcomes and resource utilization. J Am Dent Assoc. 2014 Apr;145(4):331-7. PubMed

Cohen LA, Bonito AJ, Eicheldinger C, Manski RJ, Macek MD, Edwards RR, Khanna N. Comparison of patient visits to emergency departments, physician offices, and dental offices for dental problems and injuries. J Public Health Dent. 2011;71(1):13-22. PubMed

Dental Quality Alliance (DQA). DQA measure specification sheet: follow-up after emergency department visit by children for dental caries. Chicago (IL): Dental Quality Alliance (DQA); 2015. 8 p.

Hocker MB, Villani JJ, Borawski JB, Evans CS, Nelson SM, Gerardo CJ, Limkakeng AT. Dental visits to a North Carolina emergency department: a painful problem. N C Med J. 2012 Sep-Oct;73(5):346-51. PubMed

Lewis C, Lynch H, Johnston B. Dental complaints in emergency departments: a national perspective. Ann Emerg Med. 2003 Jul;42(1):93-9. PubMed

Seu K, Hall KK, Moy E. Emergency department visits for dental-related conditions, 2009. Rockville (MD): Agency for Healthcare Research and Quality (AHRQ); 2012 Nov. 12 p. (Healthcare Cost and Utilization Project Statistical Brief; no. 143).

Primary Health Components

Dental care; dental caries; emergency department (ED) visits; follow-up; children

Denominator Description

Number of caries-related emergency department (ED) visits by children 0 through 20 years in the reporting period (see the related "Denominator Inclusions/Exclusions" field)

Numerator Description

Number of caries-related emergency department (ED) visits by children in the reporting period for which the member visited a dentist within 7 days (see the related "Numerator Inclusions/Exclusions" field)

Evidence Supporting the Measure

Type of Evidence Supporting the Criterion of Quality for the Measure

One or more research studies published in a National Library of Medicine (NLM) indexed, peer-reviewed journal

Additional Information Supporting Need for the Measure

This measure focuses on follow up because care received in the emergency department (ED) for dental problems typically is not definitive.

Dental caries is the most common chronic disease in children in the United States (Centers for Disease Control and Prevention [CDC], 2013). In 2009 to 2010, 14% of children aged 3 to 5 years had untreated dental caries. Among children aged 6 to 9 years, 17% had untreated dental caries, and among adolescents aged 13 to 15, 11% had untreated dental caries (Dye, Li, & Thorton-Evans, 2012). Untreated dental decay among children has significant short- and long-term adverse consequences (Tinanoff & Reisine, 2009). Among the more significant of these outcomes is emergency department visits for dental caries-related problems (e.g., tooth pain, abscesses).

ED care for dental caries-related problems is generally not definitive compared to that provided in primary care dental settings and often results in referral to primary care dental sites. Studies, using nationally representative ED visit data (including both children and adults) indicate that ED care for dental problems is focused on pain management and infection control for approximately 90% of patients and only 10% of patients have procedures performed in the ED (Lewis, Lynch, & Johnston, 2003; Okunseri et al., 2012). National and state studies indicate that patients presenting to the ED for dental problems are commonly referred to a primary care site for follow-up of their condition (Cohen et al., 2011; Lewis, Lynch, & Johnston, 2003). National and state data suggest that 20% to 25% of patients who visit the ED for a dental-related problem have repeat ED visits for dental problems, and many patients do not have any type of follow-up dental care (Davis, Deinard, & Maïga, 2010; Pajewski & Okunseri, 2012). Dental caries and its sequelae can be reduced through routine clinical oral evaluations, receipt of evidence-based preventive services, and adoption of good oral health habits by patients (American Academy of Pediatric Dentistry, 2013; Ahovuo-Saloranta et al., 2013; Beauchamp et al., 2008; National Institute for Health and Clinical Excellence [NICE], 2004; Tinanoff & Reisine, 2009; Weyant et al., 2013).

This measure is a process of care measure that can be used to promote improved health outcomes by allowing programs to identify, monitor and increase the percentage of children with a dental caries-related ED visit who subsequently receive outpatient dental care. The high rates of prescription drugs for pain management and infection control and lack of definitive treatment suggests the need for timely definitive care in an outpatient dental setting to avoid ongoing pain, worsening of the dental condition stemming from untreated decay, and repeat ED visits. Definitive dental care occurs primarily in dental practices in the form of advanced management of dental decay.

Evidence for Additional Information Supporting Need for the Measure

Ahovuo-Saloranta A, Forss H, Walsh T, Hiiri A, Nordblad A, Makela M, Worthington HV. Sealants for preventing dental decay in the permanent teeth. Cochrane Database Syst Rev. 2013;3:CD001830.

PubMed

American Academy of Pediatric Dentistry. Guideline on periodicity of examination, preventive dental services, anticipatory guidance/counseling, and oral treatment for infants, children, and adolescents. Pediatr Dent. 2013 Sep-Oct;35(5):E148-56. PubMed

Beauchamp J, Caufield PW, Crall JJ, Donly K, Feigal R, Gooch B, Ismail A, Kohn W, Siegal M, Simonsen R, American Dental Association Council on Scientific Affairs. Evidence-based clinical recommendations for the use of pit-and-fissure sealants: a report of the American Dental Association Council on Scientific Affairs. J Am Dent Assoc. 2008 Mar;139(3):257-68. PubMed

Centers for Disease Control and Prevention (CDC). Children's oral health. [internet]. Atlanta (GA): Centers for Disease Control and Prevention (CDC); 2013 [accessed 2015 Jan 11].

Cohen LA, Bonito AJ, Eicheldinger C, Manski RJ, Macek MD, Edwards RR, Khanna N. Comparison of patient visits to emergency departments, physician offices, and dental offices for dental problems and injuries. J Public Health Dent. 2011;71(1):13-22. PubMed

Davis EE, Deinard AS, MaÃ¯ga EW. Doctor, my tooth hurts: the costs of incomplete dental care in the emergency room. J Public Health Dent. 2010;70(3):205-10. PubMed

Dye BA, Li X, Thornton-Evans G. Oral health disparities as determined by selected healthy people 2020 oral health objectives for the United States, 2009-2010. NCHS Data Brief. 2012 Aug;(104):1-8. PubMed

Lewis C, Lynch H, Johnston B. Dental complaints in emergency departments: a national perspective. Ann Emerg Med. 2003 Jul;42(1):93-9. PubMed

National Institute for Health and Clinical Excellence (NICE). Dental recall -- recall interval between routine dental examinations. London (UK): National Institute for Health and Clinical Excellence (NICE); 2004 Oct. (Clinical guideline; no. 19).

Okunseri C, Okunseri E, Thorpe JM, Xiang Q, Szabo A. Patient characteristics and trends in nontraumatic dental condition visits to emergency departments in the United States. Clin Cosmet Investig Dent. 2012;4:1-7. PubMed

Pajewski NM, Okunseri C. Patterns of dental service utilization following nontraumatic dental condition visits to the emergency department in Wisconsin Medicaid. J Public Health Dent. 2014;74(1):34-41. PubMed

Tinanoff N, Reisine S. Update on early childhood caries since the Surgeon General's Report. Acad Pediatr. 2009 Nov-Dec;9(6):396-403. PubMed

Weyant RJ, Tracy SL, Anselmo TT, Beltran-Aguilar ED, Donly KJ, Frese WA, Hujoel PP, Iafolla T, Kohn W, Kumar J, Levy SM, Tinanoff N, Wright JT, Zero D, Aravamudhan K, Frantsve-Hawley J, Meyer DM, American Dental Association Council on Scientific Affairs Expert Panel on Topical Fluoride Caries Pr. Topical fluoride for caries prevention: executive summary of the updated clinical recommendations and supporting systematic review. J Am Dent Assoc. 2013 Nov;144(11):1279-91. PubMed

Extent of Measure Testing

The Dental Quality Alliance is an organization of major stakeholders in oral healthcare delivery that develops oral healthcare measures through consensus-building processes. Dental Quality Alliance measures are developed through an environmental scan of measure concepts that are evaluated through a modified Delphi consensus process using expert panels. Measure concepts rated high on importance,

feasibility, and validity are selected for measure development. Developed measures are tested for feasibility, reliability and validity following measure scientific acceptability guidance from the National Quality Forum. Measures are also evaluated through a formal public comment process. Measures that complete testing are presented to the full Dental Quality Alliance membership for formal approval.

Evidence for Extent of Measure Testing

Dental Quality Alliance. Dental Quality Alliance measure activities. [internet]. Chicago (IL): Dental Quality Alliance; 2015.

Dental Quality Alliance. Pediatric oral health quality and performance measures: environmental scan. Chicago (IL): Dental Quality Alliance; 2012. 31 p.

Dental Quality Alliance. Request for proposals: testing pediatric oral health performance measures ER use and general anesthesia for caries related reasons. Chicago (IL): Dental Quality Alliance; 2013.

Herndon JB. Testing pediatric oral health performance measures: emergency room use and general anesthesia for caries-related reasons. Chicago (IL): Dental Quality Alliance (DQA); 2014 Dec.

State of Use of the Measure

State of Use

Current routine use

Current Use

not defined yet

Application of the Measure in its Current Use

Measurement Setting

Unspecified

Type of Care Coordination

Coordination across provider teams/sites

Coordination between providers and patient/caregiver

Professionals Involved in Delivery of Health Services

not defined yet

Least Aggregated Level of Services Delivery Addressed

Single Health Care Delivery or Public Health Organizations

Statement of Acceptable Minimum Sample Size

Does not apply to this measure

Target Population Age

Age less than or equal to 20 years

Target Population Gender

Either male or female

National Strategy for Quality Improvement in Health Care

National Quality Strategy Aim

Better Care

National Quality Strategy Priority

Effective Communication and Care Coordination
Prevention and Treatment of Leading Causes of Mortality

Institute of Medicine (IOM) National Health Care Quality Report Categories

IOM Care Need

Getting Better

IOM Domain

Effectiveness

Timeliness

Data Collection for the Measure

Case Finding Period

January 1 to December 1 of the reporting year

Denominator Sampling Frame

Enrollees or beneficiaries

Denominator (Index) Event or Characteristic

Clinical Condition

Encounter

Patient/Individual (Consumer) Characteristic

Denominator Time Window

not defined yet

Denominator Inclusions/Exclusions

Inclusions

Number of caries-related emergency department (ED) visits by children 0 through 20 years in the reporting period

Note: Identify all ED visits for caries-related reasons occurring during eligible member months between January 1 and December 1 of the reporting year:

- Identify a health care encounter as an ED visit if any of the following are met:
  - Specific Current Procedural Terminology (CPT) codes for ED visit for evaluation or management (refer to the original measure documentation for specific CPT codes); OR
  - Revenue code 0450 to 0459 (Emergency Room [ER]) or 0981 (professional fees for ER services); OR
  - Centers for Medicare & Medicaid Services (CMS) place of service code for professional claims - 23 (Emergency Room)
- Count only one visit per member per day.
- Child must be less than 21 years on date of visit.
- Identify an ED visit as being caries related if:
  - Any of the International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) diagnosis codes in Table 1 of the original measure documentation is listed as a FIRST-LISTED diagnosis code associated with the visit
  - OR
  - (a) Any of the ICD-9-CM diagnosis codes in Table 2 of the original measure documentation is listed as a FIRST-LISTED diagnosis AND (b) Any of the ICD-9-CM diagnosis codes in Table 1 of the original measure documentation is listed as an ADDITIONAL LISTED diagnosis. (Codes from Table 2 must be accompanied by a code from Table 1 to qualify.)
- Member must be enrolled on date of ED visit and through 30 days following the visit.

Refer to the original measure documentation for administrative codes and additional information.

Exclusions

- Exclude visits that result in inpatient admissions where inpatient admissions are identified as:
  - The patient has an inpatient admission defined by Uniform Billing (UB) Type of Bill = 11x OR 12x OR 41x
  - AND
  - That admission occurred within 48 hours: [inpatient admit date] – [ED admit date] greater than or equal to 0 days AND less than or equal to 2 days.
- Medicaid/Children's Health Insurance Program (CHIP) programs should exclude those individuals who do not qualify for Early and Periodic Screening, Diagnostic and Treatment (EPSDT) benefits.

Exclusions/Exceptions

not defined yet

Numerator Inclusions/Exclusions

Inclusions

Number of caries-related emergency department (ED) visits by children in the reporting period for which the member visited a dentist within 7 days

Note:

Check if subject had a visit with a dentist (dental service) within 30 days of the ED visit:
If Current Dental Terminology (CDT) [Service-Code] = D0100 to D9999 (any dental service); AND
[Date of ED Visit]-[Date of Dental Visit] less than or equal to 30 days*; AND
If [Rendering Provider Taxonomy] code = any of the National Uniform Claim Committee (NUCC) maintained Provider Taxonomy Codes in Table 3 of the original measure documentation.
Among the ED visits identified above, check if the subject had a visit with a dentist (dental service) within 7 days of the ED visit: [DATE OF ED VISIT]-[DATE OF DENTAL VISIT] less than or equal to 7 days.

*If two or more caries-related ED visits occur for same child within 30 days of one another, then use the first ED visit as the index date for follow-up. Both ED visits will count in the denominator. A follow-up dental visit within 30 days of the first ED visit will be counted once in the numerator.

Refer to the original measure documentation for administrative codes and additional information.

Exclusions

All claims with missing or invalid Service Code, missing or invalid NUCC maintained Provider Taxonomy Codes, or NUCC maintained Provider Taxonomy Codes that do not appear in Table 3 of the original measure documentation should be excluded.

Numerator Search Strategy

Fixed time period or point in time

Data Source

Administrative clinical data

Type of Health State

Does not apply to this measure

Instruments Used and/or Associated with the Measure

Unspecified

Computation of the Measure

Measure Specifies Disaggregation

Does not apply to this measure

Scoring

Rate/Proportion

Interpretation of Score

Desired value is a higher score

Allowance for Patient or Population Factors

not defined yet

Description of Allowance for Patient or Population Factors

Primary Stratification Variables

Age: Less than 1; 1 to 2; 3 to 5; 6 to 7; 8 to 9; 10 to 11; 12 to 14; 15 to 18; 19 to 20

Reporting Note: Age stratifications will be based on subject's age on date of emergency department (ED) visit.

Standard of Comparison

not defined yet

Identifying Information

Original Title

Follow-up after emergency department visit by children for dental caries (NUM 1).

Measure Collection Name

Dental Caries in Children: Prevention & Disease Management

Submitter

Dental Quality Alliance - Health Care Quality Collaboration

Developer

Dental Quality Alliance - Health Care Quality Collaboration

Funding Source(s)

The Dental Quality Alliance with support from the American Dental Association Foundation

Composition of the Group that Developed the Measure

Dental Quality Alliance (DQA) Measure Development and Maintenance Committee (MDMC)

Financial Disclosures/Other Potential Conflicts of Interest

To ensure that a collaborative and balanced approach is followed, the Dental Quality Alliance (DQA) requests that all individuals nominated to the Measure Development and Maintenance Committee (MDMC)

and its Workgroups complete a standard conflict of interest form.

Disclosed conflicts are not confidential. Unless the individual is disqualified to serve, his or her disclosures will be shared with the other members and be published with the report. Disclosure allows the DQA to maintain a transparent process and convene a balanced group.

For additional information on conflict of interest procedures, refer to *Procedure Manual for Performance Measure Development: A Voluntary Consensus Process* (see also the "Companion Documents" field).

Endorser

National Quality Forum - None

NQF Number

not defined yet

Date of Endorsement

2015 Sep 2

Adaptation

This measure was not adapted from another source.

Date of Most Current Version in NQMC

2014 Oct

Measure Maintenance

Annual

Date of Next Anticipated Revision

January 1, 2017

Measure Status

This is the current release of the measure.

The measure developer reaffirmed the currency of this measure in April 2016.

Measure Availability

Source available from the American Dental Association (ADA) Web site .

For more information, contact ADA at 211 E. Chicago Ave, Chicago, IL 60611; Phone: 312-440-2500; Web site: www.ada.org .

Companion Documents

The following are available:

American Dental Association (ADA). Procedure manual for performance measure development: a voluntary consensus process. Chicago (IL): Dental Quality Alliance (DQA); 2013 Apr 23. 36 p.
Herndon JB. Testing pediatric oral health performance measures in the Florida and Texas Medicaid and CHIP programs. Chicago (IL): Dental Quality Alliance (DQA); 2013 Aug. 25 p.

NQMC Status

This NQMC summary was completed by ECRI Institute on August 3, 2015. The information was verified by the measure developer on September 16, 2015.

The information was reaffirmed by the measure developer on April 28, 2016.

Copyright Statement

Production

Source(s)

American Dental Association (ADA). Dental Quality Alliance user guide for measures calculated using administrative claims data, version 2.0. Chicago (IL): Dental Quality Alliance (DQA); 2016 Jan 1. 27 p. [26 references]

Dental Quality Alliance (DQA). DQA measure specification sheet: follow-up after emergency department visit by children for dental caries. Chicago (IL): Dental Quality Alliance (DQA); 2015. 8 p.

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